# VI. IEP Data Management Plan

PEN: 2019-072 YEAR: 2019

STUDY TITLE: Environmental Monitoring Program (EMP) - Continuous Real-time Water Quality

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### DATA DESCRIPTION:

Since 1983, the Interagency Ecological Program's (IEP) EMP has collected continuous real-time water quality data within the Sacramento-San Joaquin Delta and Suisun Bay. The number of stations monitored has varied over time in response to programmatic reviews and new water right decisions. The EMP monitors surface physical continuous real-time water quality constituents and chlorophyll at 15 fixed sites. Bottom specific conductance and water temperature values are also collected at four of those monitoring stations. Meteorological data is collected at ten stations in the existing continuous real-time monitoring network. Data is recorded every 15-minutes. The approximate size of the data is 12 GB.

### **RELATED DATA:**

IEP's EMP is a comprehensive monitoring program in the San Francisco Bay-Delta Estuary that entails monthly sampling of benthos, phytoplankton, zooplankton, and continuous and discrete water quality. Discrete water quality data is collected at the same time as phytoplankton and zooplankton. The zooplankton data is managed by the California Department of Fish and Wildlife (PEN: 077). Benthos and continuous water quality are sampled near some of the discrete water quality stations.

## FORMAT:

Quality assured continuous real-time water quality data can be accessed by specific DWR personnel (only) from the DWR Water Quality Portal (WQP) Oracle database. Data is populated into the WQP Oracle database once every 15 minutes. Data from the WQP Oracle database can be exported in MS Excel or text files, which can then be saved as different file formats including .xlsx, and .csv.

Preliminary (subject to revision) continuous real-time water quality data can be accessed from DWR's California Data Exchange Center (CDEC). Data is populated onto the CDEC data collection network once every 15 minutes. Data from CDEC can be exported in MS Excel or text files, which can then be saved as different file formats including html, .txt, .pdf, and others.

## METADATA:

Metadata was last updated online in 2015, but is currently under revision. DWR EMP staff follow the same metadata format for each data type. The Continuous Real-time Water Quality Metadata can be found: http://www.water.ca.gov/rtm/meta or requested by e-mail to mike.dempsey@water.ca.gov.

## STORAGE & BACKUP:

Data is stored on hard copy visit sheets and electronically in the YSI data sondes. The electronic files are transfered monthly from the YSI data sondes in binary format to DWR's Division of Environmental Services (DES's) server that is stored and backed up daily by the DWR Division of Technology Services (DTS). The hard copy data and station visit sheets are compiled monthly to be scanned as a .pdf onto DES's server. Hard copies of field visit sheets are also stored at continuous real-time water quality field stations.

### **ARCHIVING & PRESERVATION:**

The continuous real-time water quality data on WQP is stored permanently in a DTS-managed Oracle database that is backed up once a year. Hard copy visit sheets are scanned monthly and stored in a DES server that is managed by DTS and is backed-up daily. Historic reports are also scanned and stored on a DES server, while the hard copies are stored internally in the DWR/DES warehouse. The DWR is a long-established agency with no anticipated end date of existence.

### **OUALITY ASSURANCE:**

Continuous water quality data is populated into the WQP Oracle database every 15 minutes. EMP conducts a monthly check to ensure data completeness. EMP staff confirm that the data sheets properly match what was written on station visit sheets and investigates missing or incompleteness due to transcription error. A graphically editing program is used to determine outliers of the continuous real-time data stream. All errors are corrected in WQP Oracle database prior to making data public. A further QA/QC process is in the progress with the development of a Quality Assurance Project Plan.

# **ACCESS & SHARING:**

Preliminary (subject to revision) continuous real-time water quality data is publicly available on CDEC at http://cdec.water.ca.gov/. Data is populated onto the CDEC data collection network once every 15 minutes and is readily available. Quality assured continuous real-time water quality data can be accessed by specific DWR personnel (only) from the DWR Water Quality Portal (WQP) Oracle database. Data requests can be sent to mike.dempsey@water.ca.gov.

EMP staff is coordinating activities to ensure that AB 1755 requirements are being met. These duties include the development of protocols for data sharing, documentation, and quality control that will promote open and transparent access to important data on water quality and biological resources from the WQP Oracle database in a timely manner.

## **RIGHTS & REQUIREMENTS:**

None